UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

FORECASTING UNDER-5 MORTALITY RATE BY USING LEE-CARTER MODEL

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IN THE NAME OF ALLAH, (ALMIGHTY) THE MOST GRACIOUS, THE MOST MERCIFUL

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Mortality rate is one of the important indexes in health sector that indicates the level of development and health status of countries. The aim of the study is to estimate the parameter of Lee-Carter model by using Singular Value Decomposition (SVD) and the time series values for general level of mortality used to forecast from 2011 to 2018 by using Auto Regressive Integrated Moving Average (ARIMA) by its specific- age group and gender. This method is applied to Malaysian under-five mortality rate (U5MR) data from 1990 to 2017 with specific-age of infant and child (under five years old) of male and female. The fitted and actual result for each specific-age group and gender with natural logarithm (ln) function is likely to have the same pattern and the best forecasting model which is ARIMA (1,2,1). This study can be extended to different extensions approach to estimate Lee-Carter model or any stochastic mortality model.